



**JOHN DEERE**

**J**

**BACKHOES**

**315SJ**



# Specifications

## Engine 3155J

Manufacturer and Model	John Deere PowerTech™ E 4045HT054 turbocharged, standard
Non-Road Emission Standards	certified to EPA Tier 3 emissions
Displacement	276 cu. in. (4.5 L)
Net Peak Power (ISO9249)	93 hp (69 kW) @ 2,000 rpm
Net Peak Torque (ISO9249)	288 lb.-ft. (392 Nm) @ 1,300 rpm
Net Torque Rise	47%
Lubrication	pressure system with spin-on filter and cooler
Air Cleaner	dual-stage dry type with safety element and evacuator valve

## Cooling

Fan Type	suction
Engine Coolant Rating	-34 deg. F (-37 deg. C)
Engine Oil Cooler	oil to water

## Powertrain

Transmission	4-speed, helical-cut gears, full PowerShift™ with hydraulic reverser standard; electric clutch cutoff on gearshift and loader levers
Torque Converter	single stage, dual phase with 2.63:1 stall ratio; 11 in. (280 mm)

### Maximum Travel Speeds (with 16.9-28

rear tires)	Forward	Reverse
Gear 1	3.8 mph (6.1 km/h)	4.8 mph (7.7 km/h)
Gear 2	7.0 mph (11.2 km/h)	8.8 mph (14.1 km/h)
Gear 3	14.2 mph (22.9 km/h)	14.0 mph (22.5 km/h)
Gear 4	23.7 mph (38.1 km/h)	N/A

### Axles

Axle Oscillations, Stop to Stop (both axles) . . . . . 22 deg.

Axle Ratings	Mechanical-		
	Standard	front-wheel drive	Rear
Static	39,683 lb. (18 000 kg)	26,455 lb. (12 000 kg)	28,660 lb. (13 000 kg)
Dynamic	15,873 lb. (7200 kg)	13,228 lb. (6000 kg)	15,432 lb. (7000 kg)
Ultimate	72,642 lb. (32 950 kg)	62,170 lb. (28 200 kg)	67,461 lb. (30 600 kg)

Differentials . . . . . hydraulic locking front and rear, electric, foot actuated

Steering (ISO5010) . . . . . hydrostatic power and emergency steering

Axle . . . . . *Non-powered front*      *Mechanical-  
front-wheel drive*

Curb-Turning Radius		
With Brakes	11 ft. 4 in. (3.44 m)	11 ft. 9 in. (3.58 m)
Without Brakes	12 ft. 11 in. (3.94 m)	13 ft. 5 in. (4.08 m)
Bucket Clearance Circle		
With Brakes	32 ft. 5 in. (9.89 m)	33 ft. 2 in. (10.11 m)
Without Brakes	35 ft. 4 in. (10.76 m)	36 ft. 3 in. (11.05 m)
Steering Wheel Turns (lock to lock)	3.3	2.7

### Final Drives

Mechanical-Front Wheel . . . . . heavy-duty, outboard planetary final drives distribute shock loads over 3 gears

Rear Axle . . . . . heavy-duty, outboard planetary final drives distribute shock loads over 4 gears

### Brakes (conform to SAE J1473)

Service . . . . . power assisted, hydraulic wet disc, mounted inboard, self-adjusting and self-equalizing

Parking . . . . . spring-applied, hydraulically released, wet, multi disc, independent of service brakes with electric switch control

## Hydraulics 315SJ

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Main Pump	open center, gear type, tandem with unloader
Pump Flow @ 2,200 rpm	
Backhoe	36 gpm (136 L/m)
Loader	28 gpm (106 L/m)
System Relief Pressure	
Backhoe	3,625 psi (24 993 kPa)
Loader	3,625 psi (24 993 kPa)
<b>Backhoe Controls</b>	two-lever manual standard; manual and/or electric auxiliary functions optional
<b>Loader Controls</b>	single-lever control with electric clutch cutoff switch standard; manual auxiliary function optional

## Cylinders

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Type	heat-treated, chrome-plated, polished rods; hardened-steel (replaceable bushings) pivot pins		
	<i>Bore</i>	<i>Rod Diameter</i>	<i>Stroke</i>
<b>Loader Boom (2)</b>	3.15 in. (80 mm)	1.97 in. (50 mm)	31.10 in. (790 mm)
<b>Loader Bucket (1)</b>	3.54 in. (90 mm)	1.97 in. (50 mm)	29.29 in. (744 mm)
<b>Backhoe Boom (1)</b>	4.72 in. (120 mm)	2.20 in. (56 mm)	31.30 in. (795 mm)
<b>Backhoe Crowd (1)</b>	4.53 in. (115 mm)	2.48 in. (63 mm)	24.47 in. (622 mm)
<b>Backhoe Bucket (1)</b>	3.54 in. (90 mm)	2.20 in. (56 mm)	31.89 in. (810 mm)
<b>Heavy-Duty Option (1)</b>	3.94 in. (100 mm)	2.48 in. (63 mm)	31.89 in. (810 mm)
<b>Backhoe Swing (2)</b>	3.54 in. (90 mm)	1.97 in. (50 mm)	10.94 in. (278 mm)
<b>Backhoe Extendable Dipperstick (1)</b>	2.76 in. (70 mm)	1.57 in. (40 mm)	42.01 in. (1067 mm)
<b>Backhoe Stabilizer, Standard (2)</b>	2.76 in. (70 mm)	1.77 in. (45 mm)	28.19 in. (716 mm)
<b>Non-Powered Axle (1)</b>	2.76 in. (70 mm)	1.65 in. (42 mm)	8.39 in. (213 mm)
<b>Mechanical-Front-Wheel Drive (1)</b>	2.64 in. (67 mm)	1.65 in. (42 mm)	8.27 in. (210 mm)

## Electrical

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Voltage	12 volt
Alternator Rating	90 amp

## Operator Station

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Type (SAE J1040)	cab, isolation mounted, ROPS/FOPS, left/right access, with molded roof
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## Tires/Wheels

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	<i>Front</i>	<i>Rear</i>
Non-Powered Front Axle	11L-16 SL F-3 (12)	16.9-28 R-4 (10)
	11L-16 SL F-3 (12)	19.5L-24 R-4 (10)
Mechanical-Front-Wheel Drive	12.5/80-18 I-3 (10)	19.5L-24 R-4 (10)
	340/80R18 XMCL	500/70R24 XMCL
	12.5/80-18 I-3 (10)	16.9-28 R-4 (10)

## Serviceability

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Hydraulic Oil Filter, Spin-On Enclosed Replaceable Element, Vertically Mounted	6-micron filtration / 1,000 service hours
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### Refill Capacities

Cooling System	26 qt. (25 L)
Rear Axle	19 qt. (18 L)
Engine Oil (including vertical spin-on filter)	14 qt. (13 L)
Torque Converter and Transmission	16.9 qt. (16 L)
Fuel Tank (with ground-level fueling)	41 gal. (155 L)
Hydraulic System	24 gal. (91 L)
Hydraulic Reservoir	10.2 gal. (39 L)
Mechanical-Front-Wheel-Drive Housing	
Axle	7 qt. (6.6 L)
Planetary (each)	1 qt. (1 L)

## Operating Weights

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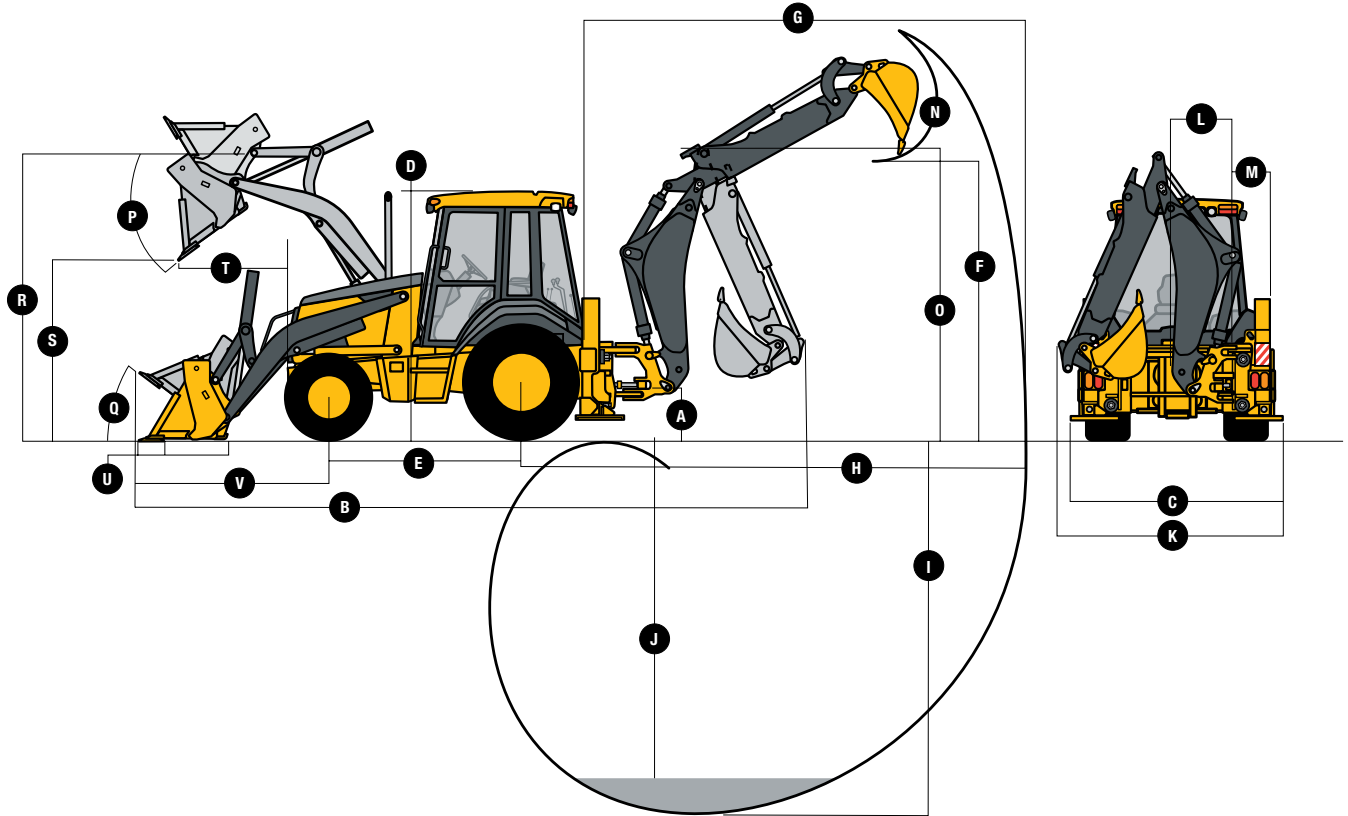
Typical with Cab, Mechanical-Front-Wheel Drive, Extendable Dipperstick, and 1,250-lb. (567 kg) Counterweight	18,600 lb. (8437 kg)
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### Optional Components

Cab	580 lb. (263 kg)
Mechanical-Front-Wheel Drive with Tires	485 lb. (220 kg)
Extendable Dipperstick	490 lb. (222 kg)
Front Loader Coupler	630 lb. (286 kg)
Backhoe Bucket Coupler	138 lb. (63 kg)

**Overall Dimensions 315SJ**

- A** Ground Clearance (minimum) . . . . . 14 in. (351 mm)
- B** Overall Length (transport) . . . . . 17 ft. 3 in. (5.26 m)
- C** Stabilizer Spread . . . . . 7 ft. 10 in. (2.40 m)
- D** Height to Top of ROPS/Cab . . . . . 9 ft. 2 in. (2.79 m)
- E** Length from Axle to Axle
  - Non-Powered Front Axle . . . . . 6 ft. 11 in. (2.11 m)
  - Mechanical-Front-Wheel-Drive Axle . . . . . 7 ft. 0 in. (2.14 m)



**Backhoe Dimensions / Performance 315SJ**

Backhoe specifications are with 24-in. x 7.5-cu.-ft. (610 mm x 0.21 m³) bucket

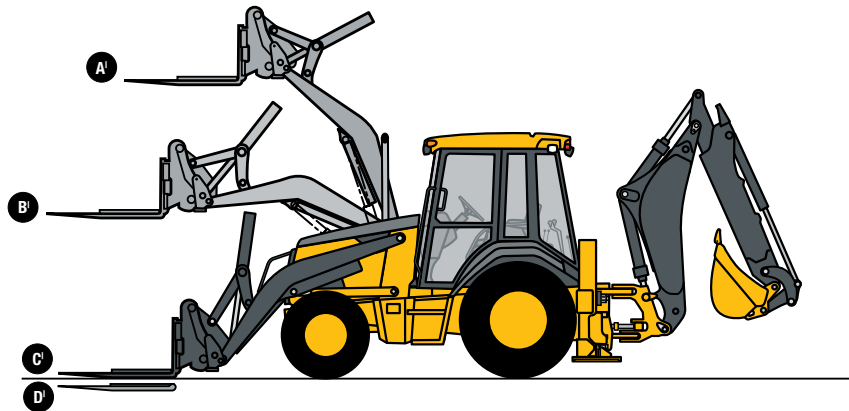
- Bucket Range . . . . . 12–30 in. (305–762 mm)
- Digging Force
  - Bucket Cylinder . . . . . 11,990 lb. (53.3 kN)
  - With Heavy-Duty Cylinder Option . . . . . 15,236 lb. (67.8 kN)
  - Crowd Cylinder . . . . . 8,090 lb. (36.0 kN)
- Swing Arc . . . . . 180 deg.
- Operator Control . . . . . two levers
- With Optional Extendable Dipperstick*
- Retracted                      Extended*
- F** Loading Height (truck loading position) . . . . . 11 ft. 9 in. (3.58 m)      14 ft. 3 in. (4.34 m)
- G** Reach from Center of Swing Pivot . . . . . 18 ft. 5 in. (5.61 m)      21 ft. 9 in. (6.63 m)
- H** Reach from Center of Rear Axle . . . . . 23 ft. 0 in. (7.01 m)      26 ft. 4 in. (8.03 m)
- I** Digging Depth (SAE maximum) . . . . . 14 ft. 6 in. (4.42 m)      18 ft. 0 in. (5.49 m)
- J** Digging Depth (SAE)
  - 2-ft. (610 mm) Flat Bottom . . . . . 14 ft. 5 in. (4.40 m)      17 ft. 10 in. (5.44 m)
  - 8-ft. (2440 mm) Flat Bottom . . . . . 13 ft. 5 in. (4.09 m)      17 ft. 2 in. (5.22 m)
- K** Overall Width (less loader bucket) . . . . . 8 ft. 2 in. (2.49 m)      8 ft. 2 in. (2.49 m)
- L** Side-Shift from Tractor Centerline . . . . . 23 in. (584 mm)      23 in. (584 mm)
- M** Wall-to-Swing Centerline . . . . . 24.4 in. (620 mm)      24.4 in. (620 mm)
- N** Bucket Rotation . . . . . 190 deg.
- O** Transport Height . . . . . 11 ft. 5 in. (3.48 m)      11 ft. 5 in. (3.48 m)

**Loader Dimensions / Performance 315SJ**

<b>P</b> Bucket Dump Angle (maximum)	45 deg.					
<b>Q</b> Rollback Angle at Ground Level	40 deg.					
Bucket Capacity	<i>Heavy-duty</i> 1.00 cu. yd. (0.77 m <sup>3</sup> )	<i>Heavy-duty</i> 1.12 cu. yd. (0.86 m <sup>3</sup> )	<i>Heavy-duty long lip</i> 1.25 cu. yd. (0.96 m <sup>3</sup> )	<i>Heavy-duty</i> 1.31 cu. yd. (1.00 m <sup>3</sup> )	<i>Multipurpose</i> 1.25 cu. yd. (0.96 m <sup>3</sup> )	<i>Multipurpose</i> 1.31 cu. yd. (1.00 m <sup>3</sup> )
Width	86 in. (2184 mm)	86 in. (2184 mm)	86 in. (2184 mm)	92 in. (2337 mm)	86 in. (2184 mm)	92 in. (2337 mm)
Weight	800 lb. (363 kg)	860 lb. (390 kg)	892 lb. (405 kg)	1,148 lb. (521 kg)	1,750 lb. (795 kg)	1,800 lb. (817 kg)
Breakout Force	11,160 lb. (49.6 kN)	11,051 lb. (49.2 kN)	10,210 lb. (45.4 kN)	10,300 lb. (45.8 kN)	9,700 lb. (43.1 kN)	9,650 lb. (42.9 kN)
Lift Capacity (full height)	7,419 lb. (3368 kg)	7,353 lb. (3338 kg)	7,340 lb. (3332 kg)	7,200 lb. (3269 kg)	6,700 lb. (3042 kg)	6,600 lb. (2996 kg)
<b>R</b> Height to Bucket Hinge Pin (maximum)	11 ft. 2 in. (3.40 m)	11 ft. 2 in. (3.40 m)	11 ft. 2 in. (3.40 m)	11 ft. 2 in. (3.40 m)	11 ft. 2 in. (3.40 m)	11 ft. 2 in. (3.40 m)
<b>S</b> Dump Clearance (bucket at 45 deg.)	8 ft. 10 in. (2.69 m)	8 ft. 10 in. (2.69 m)	8 ft. 2 in. (2.48 m)	8 ft. 8 in. (2.64 m)	8 ft. 7 in. (2.62 m)	8 ft. 7 in. (2.62 m)
<b>T</b> Reach at Full Height (bucket at 45 deg.)	30.9 in. (785 mm)	30.2 in. (767 mm)	35.9 in. (911 mm)	30.1 in. (765 mm)	32.2 in. (818 mm)	32.2 in. (818 mm)
<b>U</b> Digging Depth Below Ground (bucket level)	6.3 in. (160 mm)	6.9 in. (175 mm)	5.8 in. (147 mm)	8.1 in. (206 mm)	7.3 in. (185 mm)	7.3 in. (185 mm)
<b>V</b> Length From Front Axle Centerline to Bucket Cutting Edge	6 ft. 8 in. (2.03 m)	6 ft. 8 in. (2.03 m)	7 ft. 2 in. (2.18 m)	6 ft. 8 in. (2.03 m)	7 ft. 3 in. (2.20 m)	7 ft. 1 in. (2.15 m)

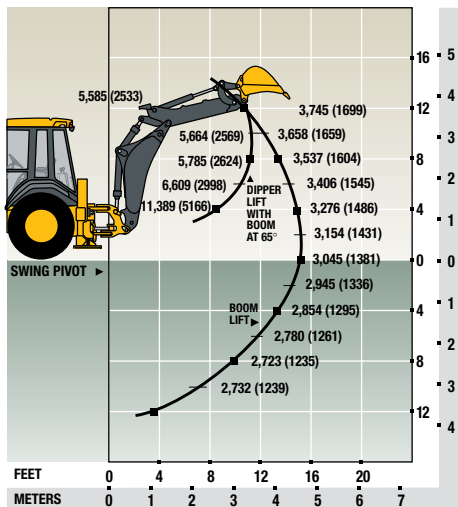
**Lift Capacity with Quick-Coupler / Forks**

- A'** Maximum Height ..... 4,570 lb. (2073 kg)
- B'** Maximum Reach ..... 6,971 lb. (3162 kg)
- C'** At Ground Line ..... 9,138 lb. (4145 kg)
- D'** Below Ground Line ..... 8.3 in. (211 mm)

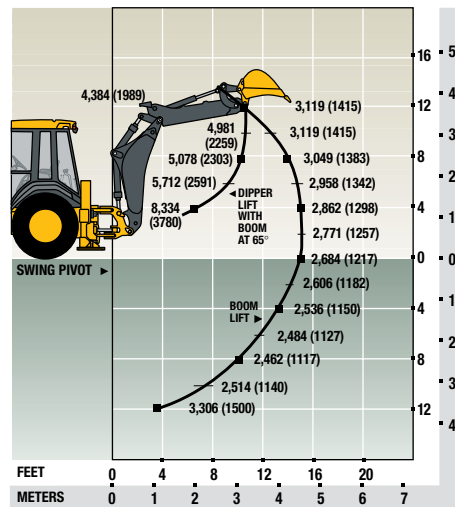


Lift capacities are over-end values in lb. (kg) according to SAE J31. Figures listed are 87% of the maximum lift force available. Base vehicle includes counterweight.

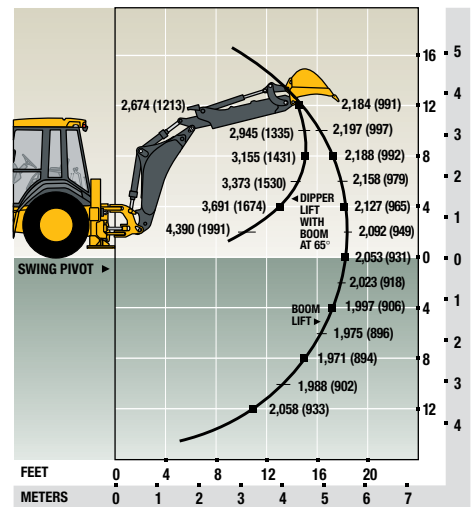
**315SJ Backhoe with Standard Dipperstick**



**315SJ Backhoe with 3-ft. 6-in. (1.07 m) Extendable Dipperstick, Retracted**



**315SJ Backhoe with 3-ft. 6-in. (1.07 m) Extendable Dipperstick, Extended**



For more detailed spec information and available options, log on to [www.JohnDeere.com](http://www.JohnDeere.com).

## 315SJ BACKHOE LOADER

**Key:** ● Standard equipment ▲ Optional equipment

\*See your John Deere dealer for further information.

### 315SJ Engine

- Certified to EPA Tier 3 emissions
- John Deere Model 4045HT054 – 4.5 liter, 93 net peak hp (69 kW) turbocharged, isolation mounted
- Vertical spin-on engine oil filter
- Vertical spin-on fuel filter with water separator
- Oil-to-water engine oil cooler
- Antifreeze, -34°F (-37°C)
- Coolant recovery tank
- Serpentine belt with automatic belt tensioner
- Suction-type cooling fan
- Enclosed safety fan guard
- ▲ High ambient temperature engine cooling
- Dual-element dry-type air cleaner
- Muffler, under hood with curved-end exhaust stack
- ▲ Electric ether starting aid
- ▲ Engine coolant heater, 1,000 watts

### Powertrain

- PowerShift™ transmission: Torque converter with electrically actuated twist grip F-N-R with neutral safety switch interlock (1st through 4th gears)
- Transmission oil cooler
- Vertical spin-on transmission filter
- ▲ Transmission remote oil-sampling port
- Differential lock, electric foot-actuated
- Planetary final drives
- Power-assisted hydraulic service brakes (conform to ISO 3450): Inboard, wet multi-disc, self-adjusting self-adjusting and self-equalizing
- Parking/emergency brake with electric switch control (conforms to ISO 3450): Spring applied, hydraulically released wet multi-disc / Independent of service brakes
- Hydrostatic power steering with emergency manual mode
- ▲ Non-powered front axle
- Mechanical-front-wheel-drive with traction control limited-slip differential: Electric on/off control / Driveshaft guard / Sealed axle
- ▲ Rear wheel spacers for use with chains

### Backhoe

- Extendable dipperstick, 14-ft. 6-in. digging depth
- ▲ Heavy-duty backhoe bucket cylinder option
- Two-lever (Deere) backhoe controls
- Backhoe transport lock lever
- Swing lock pin stored in operator's station
- Stabilizers with two-direction anti-drift valves
- Less bucket, with bucket pins
- ▲ Standard-duty backhoe bucket with lift loops
- ▲ Heavy-duty backhoe bucket with lift loops
- ▲ Severe-duty backhoe bucket with lift loops
- ▲ Backhoe coupler for "C," "D," "E," and "G" Series John Deere, Case, and Cat buckets
- ▲ Auxiliary backhoe valve for swingers, thumbs, etc. with auxiliary plumbing
- ▲ Auxiliary backhoe valve for hammers and compactors with auxiliary plumbing

### 315SJ Loader†

- Loader bucket anti-spill (rollback)
- Return-to-dig feature
- Single-lever control with electric clutch cutoff switch
- Bucket-level indicator
- Loader boom service lock
- ▲ Ride control
- ▲ Auxiliary loader hydraulics with two-lever control
- ▲ Front loader hydraulic coupler for buckets, forks, etc.
- Less bucket, with bucket pins
- High-visibility loader arms

### Hydraulic System

- 36-gpm (136 L/min.) tandem gear pump, open-center system
- Independent hydraulic reservoir
- "O"-ring face seal connectors
- 6-micron vertical spin-on filter

### Electrical System

- 12-volt system
- 90-amp alternator
- Single battery with 190-min. reserve capacity and 950 CCA
- ▲ Dual batteries with 380-min. reserve capacity and 1,900 CCA
- Positive terminal battery cover
- Blade-type multi-fused circuits
- By-pass start safety cover on starter
- ▲ Master disconnect switch
- Jump/auxiliary start terminal

### Lights

- Additional halogen work lights (6), 32,500 candlepower each (2 front, 2 rear, and 2 side docking)
- Turn signal/flashing (2 front and 2 rear)
- Rear stop and tail (2)
- Rear reflectors (2)

### Operator's Station

- Modular-design ROPS/FOPS cab with molded roof (conforms to SAE J1040): Isolation mounted
- Left and right access
- Slip-resistant steps and ergonomically located handholds (conform to SAE J185)
- Molded floor mats
- Headliner
- Coat hook
- 12-volt outlets (2 cab, 1 canopy)
- Built-in beverage and Thermos bottle holders
- Built-in Operator's Manual storage compartment with manual
- Interior rearview mirror
- ▲ Outside rearview mirrors
- Rotary hand throttle
- Suspended foot throttle
- Tilt steering
- Horn
- Key start switch with electric fuel shutoff
- ▲ Electronic anti-theft enabled through monitor

### 315SJ Operator's Station (continued)

- Engine coolant temperature gauge, illuminated electronic, with audible warning
- Oil temperature gauge, illuminated electronic, with audible warning
- Fuel gauge, illuminated electronic
- Digital display of engine hours, engine rpm, and system voltage
- Monitor system with audible and visual warnings: Engine air restriction indicator / Low alternator voltage indicator / Engine oil pressure indicator with audible warning / Hydraulic filter restriction indicator / Parking brake on/off indicator with audible warning / Seat belt indicator / Low brake pressure / Machine diagnostic information via 4-pushbutton/LCD operator interface
- Mechanical suspension deluxe vinyl swivel seat with lumbar adjustment and armrests (fully adjustable)
- ▲ Mechanical suspension deluxe fabric swivel seat with lumbar adjustment and armrests (fully adjustable)
- ▲ Air suspension deluxe fabric swivel seat with lumbar adjustment
- Seat belt, 2-in., with retractor
- ▲ Seat belt, 3-in., with retractor
- ▲ Cab: Headliner, dome light, left and right cab doors, tinted safety glass, windshield wiper (one rear and one front), front windshield washer, fresh-air intake, heater/defroster/pressurizer (40,000-Btu/hr. [11.7 kW] heater), and 12-volt outlets (2)
- ▲ Air conditioner (26,000-Btu/hr. [7.6 kW] output and CFC-free R134a refrigerant)
- ▲ AM/FM/weather-band radio
- ▲ AM/FM/weather-band radio with CD player

### Overall Vehicle

- One-piece unitized construction mainframe
- Vehicle tie-downs (2 front and 2 rear)
- Remote grease bank for front axle
- Heavy-duty front bumper
- ▲ 450-lb. (204 kg) front counterweight
- ▲ 700-lb. (317 kg) front counterweight
- ▲ 1,000-lb. (454 kg) front counterweight
- ▲ 1,250-lb. (567 kg) front counterweight
- ▲ 1,450-lb. (657 kg) front counterweight
- ▲ Rubber grille bumpers
- Fuel tank, 41 gal. (155 L), ground-level fueling
- Two-position easy-tilt hood
- Extended grille frame
- Removable toolbox with padlock hasp
- Vandal protection for locking monitor, engine hood, toolbox, hydraulic reservoir, and fuel tank
- Reverse warning alarm
- ▲ Sound-reduction package
- Dent-resistant full-coverage rear fenders
- ▲ JDLink™ wireless communication system

†See dealer for range of heavy-duty, multipurpose, and coupler buckets and forks.



JOHN DEERE

12-19-08

Net engine power is with standard equipment including air cleaner, exhaust system, alternator, and cooling fan at test conditions specified per ISO9249. No derating is required up to 10,000-ft. (3050 m).

Specifications and design subject to change without notice. Wherever applicable, specifications are in accordance with SAE standards. Except where otherwise noted, these specifications are based on a unit with 16.9-28 R-4 (10) rear and 11L-16 SL F-3 (12) front tires, 1.31-cu.-yd. (1.00 m<sup>3</sup>) loader bucket, and 24-in. x 7.5-cu.-ft. (610 mm x 0.21 m<sup>3</sup>) backhoe bucket.



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